

Applicant : R.G.F. Visser and Jean-Paul Vincken  
Serial No. : 10/009,876  
Filed : December 11, 2001 (I.A. Filing Date June 11, 1999)  
Page 2

---

--CROSS REFERENCE TO RELATED APPLICATIONS

B<sup>1</sup> This application is U.S. National Stage application of PCT/NL00/00406, filed June 13, 2000, and also claims priority to European patent application 99201862.2, filed June 11, 1999.--

---

IN THE CLAIMS:

Please cancel claims 1-38 and add the following new claims 39-58.

---

B<sup>2</sup> 39. (New) A genetic construct comprising (a) a first nucleotide sequence encoding an enzyme that interacts with starch or starch granules and (b) a second nucleotide sequence encoding a starch binding domain, wherein the construct is suitable for transforming a plant, and wherein the plant transformed with the construct expresses a fusion protein comprising the enzyme and the starch binding domain.

40. (New) The genetic construct of claim 39, wherein the enzyme is selected from the group consisting of a potato granule-bound starch synthase I (GBSS1), an E. coli glycogen branching enzyme, and a potato kinase R1.

41. (New) The genetic construct of claim 39, wherein the starch binding domain is a starch binding domain of a cyclodextrin glycosyltransferase (CGTase) from Bacillus circulans.

42. (New) The genetic construct of claim 39, further comprising a region encoding a signal sequence, wherein the signal sequence causes the fusion protein to be directed to a starch-containing cell.

Applicant : R.G.F. Visser and Jean-Paul Vincken  
Serial No. : 10/009,876  
Filed : December 11, 2001 (I.A. Filing Date June 11, 1999)  
Page 3

43. (New) The genetic construct of claim 42, wherein the signal sequence is the potato GBSS1 signal sequence.

44. (New) The genetic construct of claim 39, further comprising a region encoding a linker sequence, wherein the linker sequence is present in the fusion protein between the enzyme and the starch binding domain.

45. (New) A plant transformed with the genetic construct of claim 39, or a descendent of the plant that expresses the fusion protein.

B<sup>2</sup>  
46. (New) The plant of claim 45, wherein the fusion protein is expressed in a seed, leaf, root, tuber, stem, fruit, and/or flower of the plant.

47. (New) The plant of claim 45, wherein the fusion protein is expressed in a tuber of the plant.

48. (New) The plant of claim 45, wherein the fusion protein is expressed in a flower of the plant.

49. (New) The plant of claim 45, wherein the plant is selected from the group consisting of potato, sweet potato, cassava, pea, taro, sago, yam, banana, rice, maize, wheat and barley.

50. (New) A seed, tuber, seedling, or other cultivating material from the plant of claim 45.

Applicant : R.G.F. Visser and Jean-Paul Vincken  
Serial No. : 10/009,876  
Filed : December 11, 2001 (I.A. Filing Date June 11, 1999)  
Page 4

51. (New) A fusion protein comprising an enzyme that interacts with starch or starch granules and a starch binding domain.

52. (New) The fusion protein of claim 51, wherein the enzyme is selected from the group consisting of a potato granule-bound starch synthase I (GBSS1), an E. coli glycogen branching enzyme, and a potato kinase R1.

53. (New) The fusion protein of claim 51, wherein the starch binding domain is a starch binding domain of a cyclodextrin glycosyltransferase (CGTase) from Bacillus circulans.

54. (New) A plant expressing the fusion protein of claim 51.

55. (New) A seed, tuber, seedling, or other cultivating material from the plant of claim 64.

56. (New) A method for expressing a fusion protein in a plant, the method comprising transforming the plant with the genetic construct of claim 39.

57. (New) The method of claim 56, wherein the plant is selected from the group consisting of potato, sweet potato, cassava, pea, taro, sago, yam, banana, rice, maize, wheat and barley.

58. (New) A method for increasing the affinity for starch and/or starch granules of an enzyme that can interact with starch or starch granules, the method comprising expressing a fusion protein in a plant, the fusion protein comprising the enzyme and at least one starch binding domain.